

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-29 (Cancelled)

Claim 30 (New) A process for manufacturing a substrate, at least one part of the surface of the substrate has been rendered hydrophobic, wherein said hydrophobic surface structure comprises an essentially mineral silicon-containing sublayer formed at least partly on the surface of the substrate, and an outer layer of hydrophobic agent grafted onto said sublayer, wherein said sublayer had a surface that was in an activated state before being brought into contact with said hydrophobic agent, wherein said process comprises:

treating a surface of the silicon-containing mineral layer to activate the surface of the silicon-containing mineral layer in at least one pass, depositing the coating layer of hydrophobic agent, in at least one pass, on the surface, in the activated state, of the silicon-containing mineral layer formed at least partly on the surface of the substrate and

wherein said treating is carried out under conditions that allow a silicon-containing layer to be etched, with a plasma of at least one fluorine-containing gas chosen from SF<sub>6</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub> and other fluorinated gases, optionally combined with oxygen in an amount up to 50% by volume of the etching plasma.

31. (New) The process according to Claim 30, wherein the hydrophobic agent is deposited within a time of from 1 second to 15 minutes, after the activation of the surface of the silicon-containing mineral layer.

32. (New) The process according to Claim 30, wherein the activation is monitored.

33. (New) The process according to Claim 30, wherein the silicon-containing layer is deposited, cold, on the substrate by vacuum cathode sputtering.

34. (New) The process according to Claim 33, wherein the silicon-containing layer is deposited, cold, on the substrate by magnetron sputtering, ion beam sputtering, or by low-

U.S. application serial no. 10/590,197

Reply to the Official Action of October 1, 2010 and the Notice of April 18, 2011

pressure plasma-enhanced chemical vapour deposition (PECVD), or atmospheric- pressure PECVD.

35. (New) The process according to Claim 34, further comprising depositing a layer of  $\text{SiO}_2$ , as silicon-containing layer, by PECVD, with a mixture of an organic or nonorganic, silicon-containing precursor and an oxidizer, wherein the subsequent activation being carried out in the same chamber or in a separate chamber.

36. (New) The process according to Claim 35, wherein the silicon-containing precursor is  $\text{SiH}_4$ , hexamethyldisiloxane, tetraethoxysilane and tetramethyldisiloxane.

37. (New) The process according to Claim 30, wherein the outer layer of hydrophobic agent is based on a hydrophobic agent is a fluorosilane and wherein the fluorosilane layer is deposited by wiping-on, evaporation or spraying of a solution containing the fluorosilane, or by dipping, spin-coating, or flow-coating with a solution containing the fluorosilane.

38. (New) The process according to Claim 30, wherein the substrate is formed by a plate, whether plane or with curved faces, of monolithic or laminated glass, of glass-ceramic or of a hard thermoplastic.

39. (New) The process according to Claim 30, wherein said sublayer is formed by a compound chosen from  $\text{SiO}_x$ , where  $x \leq 2$ ,  $\text{SiOC}$ ,  $\text{SiON}$ ,  $\text{SiOCN}$  and  $\text{Si}_3\text{N}_4$ , it being possible for hydrogen to be combined in all proportions with  $\text{SiO}_x$ , where  $x \leq 2$ ,  $\text{SiOC}$ ,  $\text{SiON}$  and  $\text{SiOCN}$

40. (New) The process according to Claim 30, wherein the silicon-containing sublayer comprises aluminum or carbon, Ti, Zr, Zn and S.

41. (New) The process according to Claim 40, wherein the silicon-containing sublayer comprises aluminum in an amount up to 8% by weight.

42. (New) The process according to Claim 30, wherein the activated surface of the silicon-containing sublayer has a thickness of 20 nm to 250 nm.

43. (New) The process according to Claim 30, wherein the activated surface of the silicon-containing sublayer has a thickness of 30 nm to 100 nm.

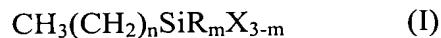
44. (New) The process according to Claim 30, wherein the activated surface of the silicon-containing sublayer has a thickness of 30 nm to 75 nm.

45. (New) The process according to Claim 30, wherein the activated surface of the silicon-containing sublayer has an RMS roughness of 0.1 nm to 40 nm.

46. (New) The process according to Claim 30, wherein the activated surface of the silicon-containing sublayer has an actual developed area at least 40% greater than the initial plane area.

47. (New) The process according to Claim 30, wherein the outer layer of hydrophobic agent is based on a hydrophobic agent is:

(a) an alkylsilane of formula (I):



in which:

n ranges from 0 to 30, more particularly from 0 to 18;

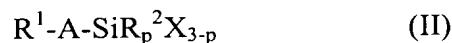
m = 0, 1, 2 or 3;

R represents an optionally functionalized organic chain; and

X represents a hydrolyzable residue that is an OR<sup>0</sup> residue, where R<sup>0</sup> represents hydrogen; or a linear, branched or cyclic alkyl residue, an aryl residue; or a halo residue;

(b) a compound with grafted silicone chains;

(c) a fluorosilane that has a formula (II):



in which:

$R^1$  represents an  $C_1$ - $C_9$  monofluoroalkyl, oligofluoroalkyl or perfluoroalkyl residue; or a monoaryl, oligoaryl or perfluoroaryl residue;

$A$  represents a hydrocarbon chain, optionally interrupted by a heteroatom selected from O or S;

$R^2$  represents a linear, branched or cyclic alkyl residue, or an aryl residue; X represents a hydrolyzable residue that is an  $OR^3$  residue, where  $R^3$  represents hydrogen or a linear, branched or cyclic, alkyl residue; an aryl residue; or a halo residue; and

$p = 0, 1$  or  $2$ .

48. (New) The process according to Claim 30, wherein the layer of hydrophobic agent has a weight per unit area of grafted fluorine of  $0.1 \mu\text{g}/\text{cm}^2$  and  $3.5 \mu\text{g}/\text{cm}^2$ .